

SEVERE STORMS.

Tornadoes were relatively infrequent. Seven were reported, as follows:

Houghton, Mich., 10th: A small tornado passed within 10 miles of the station. No loss of life, but much damage to growing timber.

Greenville, S. C., 14th: Small tornado near town; slight property loss.

Staten Island, New York City, 16th: A small tornado "swept over the lower end of Staten Island and left a trail of destruction in its wake." Pictures in the *New York Evening Post*, June 26, 1920, show some of the frame buildings destroyed.

Charlotte, N. C., 20th: Tornado near town caused damage estimated at \$30,000. (See pp. 351-352, above.)

Peoria, Ill., 22d: Small tornado 5 miles north of station; no material damage.

Cheyenne, Wyo., 24th: Tornado near Hillsdale, about 18 miles distant from Cheyenne, unusual for that section, but without large damage. (See p. 352, above.)

Rapid City, S. Dak., 29th: Destructive tornado 5 miles west of city, but without large property loss.

A severe storm on June 8 was reported from North Dakota and Minnesota:

St. Paul, Minn., June 9: At least two persons were killed, thirty or more injured, and heavy property damage resulted from a severe wind and electrical storm which swept northern Minnesota and parts of eastern North Dakota last night, according to reports received here early to-day.

Several buildings, including a grain elevator, were destroyed and several persons hurt, but no one was killed.

Breckenridge, Minn., June 9: Fifteen persons were injured, seven seriously, when four coaches of Northern Pacific passenger train No. 156 were blown from the track last night near Foxholme. A score of others received minor hurts.

At Gardner, N. Dak., several cars of a Great Northern freight train were swept from the track and two members of the crew were injured, telegraph reports said.¹

On the afternoon of June 19 a thunderstorm with a severe squall swept across the region between Washington, D. C., and Rockville, Md. A child was killed in Chevy Chase by a falling tree. A great many trees, some exceeding even a foot in diameter, were broken off or uprooted.

¹ Washington Evening Star, June 9, 1920.

STORMS AND WARNINGS—WEATHER AND CROPS.

STORMS AND WEATHER WARNINGS.

By EDWARD H. BOWIE, Supervising Forecaster.

[Washington, July 23, 1920.]

Washington forecast district.—There were no unusual happenings in the Washington forecast district during the current month. Frost warnings were issued the morning of the 3d for upper Michigan.

Northeast storm warnings were ordered the morning of the 5th for the Atlantic coast at and between Block Island, R. I., and Portland, Me., at which time a secondary disturbance was developing over New Jersey. This disturbance gathered intensity during the 5th, and during the night of this day it caused strong easterly winds and gales off the eastern coast of New England. Storm warnings were not again ordered until the evening of the 15th, and then for western Lake Superior when a disturbance, central over Iowa, showed indications of an increase in intensity and an eastward movement. On the 16th, when the center of this disturbance was over northeastern Iowa, the display of warnings was extended to eastern Lake Superior, Lake Michigan, and northern Lake Huron. The disturbance passed eastward over the Great Lakes on the 16th and 17th, and it was attended by strong winds and moderate gales on these dates. This disturbance approached the north Atlantic coast during the night of the 17th, and the afternoon of that day northwest storm warnings were displayed at and between Cape Henry, Va., and Portland, Me. The highest winds reported on the Atlantic coast in connection with this storm were 48 miles per hour at Block Island and 46 miles per hour at Nantucket. On the evening of the 20th southwest storm warnings were displayed on Lakes Erie and Ontario, and southeast storm warnings on the Atlantic coast at and between Delaware Breakwater and Portland, Me. At this time a disturbance was central over northern Ohio, increasing in intensity and moving northeastward. It was unattended, however, by winds of gale force.

WARNINGS FROM OTHER DISTRICTS.

Chicago forecast district.—No general warnings of any kind were issued during the month.

Frost warnings, however, were sent to the Dakotas, Montana, Wyoming, and western Nebraska on the morning of the 1st, and these were verified over most of Wyoming and a portion of Montana. The temperature did not fall to a sufficiently low point for the occurrence of frost in the States farther east.

The cranberry marshes of Wisconsin were unusually free from frost during the month, June 3 being the only day upon which critical temperatures occurred. Frost was reported on that morning from three of the four cranberry marsh stations. The minimum temperature in the bogs ranged from 28° to 30°. Warnings were telegraphed to the growers the previous day, June 2, at 3 p. m.

From time to time forecasts were made in a general way of important changes in temperature, and were well verified. These were published in the daily weather map issued at the Chicago station and also in the Corn and Wheat Region bulletin published at Chicago, and included in the summaries telegraphed daily to the various corn and wheat region centers.—*H. J. Cox.*

New Orleans Forecast District.—There were no noteworthy departures from normal June weather during the month just ended. No storm warnings were issued or needed. Small craft warnings were displayed on the Texas Coast on the 19th.—*R. A. Dyke.*

Denver Forecast District.—No important storms crossed the district during the month, and no frost or freezing temperature warnings were issued, except for high districts in Utah on one date.

Fire-weather warnings were issued on a few dates for the greater part of the district. The highest velocities reported were 48 miles from the SW. at Salt Lake City and 48 miles from the S. at Modena on the 10th. Advices of fresh to strong westerly winds were issued for the greater part of the district, including Utah, on the 9th.—*Frederick W. Brist.*

San Francisco Forest District.—Small-craft warnings were displayed on the 6th, 10th, 22d, and 26th at different